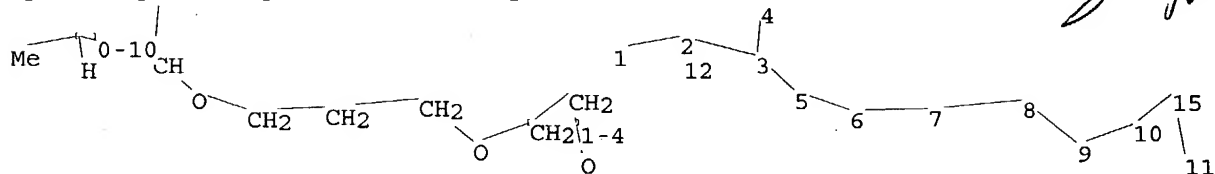


L5 0 SEA SSS FUL L3

=>

Uploading C:\Program Files\Stnexp\Queries\10679 126.str



chain nodes :

1 2 3 4 5 6 7 8 9 10 11 12 15

chain bonds :

1-2 2-3 2-12 3-4 3-5 5-6 6-7 7-8 8-9 9-10 10-15 11-15

exact/norm bonds :

3-5

exact bonds :

1-2 2-3 2-12 3-4 5-6 6-7 7-8 8-9 9-10 10-15 11-15

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:CLASS
10:CLASS 11:CLASS 12:CLASS 15:CLASS

L6 STRUCTURE UPLOADED

=> d

L6 HAS NO ANSWERS

L6 STR

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Structure attributes must be viewed using STN Express query preparation.

=> s 16

SAMPLE SEARCH INITIATED 13:35:29 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 7223 TO ITERATE

13.8% PROCESSED 1000 ITERATIONS

0 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 139367 TO 149553

PROJECTED ANSWERS: 0 TO 0

L7 0 SEA SSS SAM L6

=> s 16 full

FULL SEARCH INITIATED 13:35:34 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 142836 TO ITERATE

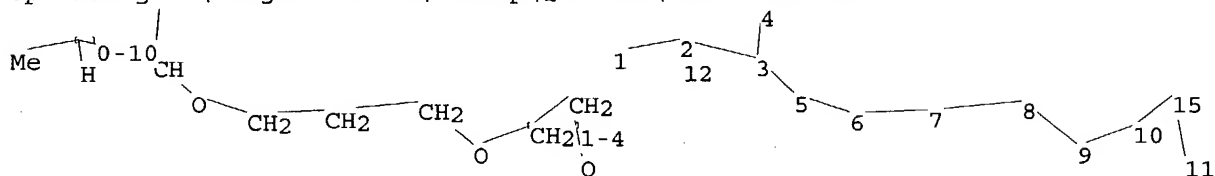
100.0% PROCESSED 142836 ITERATIONS
SEARCH TIME: 00.00.02

0 ANSWERS

L8 0 SEA SSS FUL L6

=>

Uploading C:\Program Files\Stnexp\Queries\10679 126.str



chain nodes :

1 2 3 4 5 6 7 8 9 10 11 12 15

chain bonds :

1-2 2-3 2-12 3-4 3-5 5-6 6-7 7-8 8-9 9-10 10-15 11-15

exact/norm bonds :

3-5

exact bonds :

1-2 2-3 2-12 3-4 5-6 6-7 7-8 8-9 9-10 10-15 11-15

Match level :

1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:CLASS

10:CLASS 11:CLASS 12:CLASS 15:CLASS

L9 STRUCTURE UPLOADED

=> d

L9 HAS NO ANSWERS

L9 STR

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Structure attributes must be viewed using STN Express query preparation.

=> s 19

SAMPLE SEARCH INITIATED 13:37:30 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 10950 TO ITERATE

9.1% PROCESSED 1000 ITERATIONS

0 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 212732 TO 225268

PROJECTED ANSWERS: 0 TO 0

L10 0 SEA SSS SAM L9

=> s 19 full

FULL SEARCH INITIATED 13:37:35 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 217346 TO ITERATE

100.0% PROCESSED 217346 ITERATIONS
SEARCH TIME: 00.00.02

4 ANSWERS

L11 4 SEA SSS FUL L9

=> d 104

4 ANSWERS ARE AVAILABLE. SPECIFIED ANSWER NUMBER EXCEEDS ANSWER SET SIZE
The answer numbers requested are not in the answer set.
ENTER ANSWER NUMBER OR RANGE (1):end

=> d 1-4

L11 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2004 ACS on STN
RN 228718-16-9 REGISTRY
CN 1-Propanol, 3-[3-[3-(1-methylethoxy)propoxy]propoxy]- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C12 H26 O4
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER

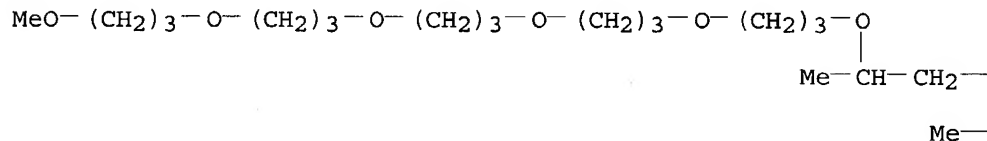
i-PrO-(CH₂)₃-O-(CH₂)₃-O-(CH₂)₃-OH

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

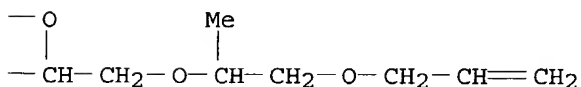
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 2 OF 4 REGISTRY COPYRIGHT 2004 ACS on STN
RN 218898-40-9 REGISTRY
CN 2,6,10,14,18,22,25,28,31-Nonaoxatetratriacont-33-ene, 23,26,29-trimethyl- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C28 H56 O9
SR CA
LC STN Files: CA, CAPLUS

PAGE 1-A



PAGE 1-B

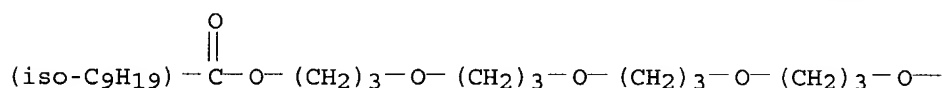


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

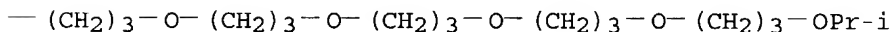
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2004 ACS on STN
RN 122024-29-7 REGISTRY
CN Isodecanoic acid, 37-methyl-4,8,12,16,20,24,28,32,36-nonaoxaocatriacont-1-yl ester (9CI) (CA INDEX NAME)
MF C40 H80 O11
CI IDS
SR CA
LC STN Files: CA, CAPLUS

PAGE 1-A

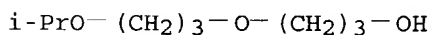


PAGE 1-B



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L11 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2004 ACS on STN
RN 54518-03-5 REGISTRY
CN 1-Propanol, 3-[3-(1-methylethoxy)propoxy] - (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C9 H20 O3
LC STN Files: BEILSTEIN*, CA, CAPLUS, DETHERM*, HODOC*, SPECINFO
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> file caplus
COST IN U.S. DOLLARS
FULL ESTIMATED COST

SINCE FILE	TOTAL
ENTRY	SESSION
480.06	480.63

FILE 'CAPLUS' ENTERED AT 13:38:11 ON 22 APR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 22 Apr 2004 VOL 140 ISS 17
FILE LAST UPDATED: 21 Apr 2004 (20040421/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l11

L12 4 L11

=> d ibib abs hitstr 1-4

L12 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:421733 CAPLUS

DOCUMENT NUMBER: 131:89141

TITLE: Preparation of acrylic-based copolymer latex coatings with low environmental toxicity

INVENTOR(S): Sugerman, Gerald

PATENT ASSIGNEE(S): USA

SOURCE: PCT Int. Appl., 24 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9932563	A2	19990701	WO 1997-US24224	19971219
W: AU, BR, CA, HU, JP, MX, NO, RU, SE, SG, TR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2314975	AA	19990701	CA 1997-2314975	19971219
AU 9860143	A1	19990712	AU 1998-60143	19971219
BR 9714916	A	20001226	BR 1997-14916	19971219
PRIORITY APPLN. INFO.:			WO 1997-US24224	A 19971219

AB Low- or no VOC acrylic and vinyl copolymer latex, useful for coatings, paints and inks, is prepared by using nonvolatile reactive amines as neutralizers, (non)hydroxyl-containing unsatd. esters and/or ethers and/or ether-esters and saturated hydroxyl-containing etherified and/or esterified oligomeric glycols and/or oligools as coalescents, and hypersurfactants replacing volatile amines and/or ammonia, organic solvents, and conventional soaps and/or dispersants and/or detergents, resp.

IT 228718-16-9

RL: NUU (Other use, unclassified); USES (Uses)

(coalescents; preparation of acrylic-based copolymer latex coatings with low environmental toxicity)

RN 228718-16-9 CAPLUS

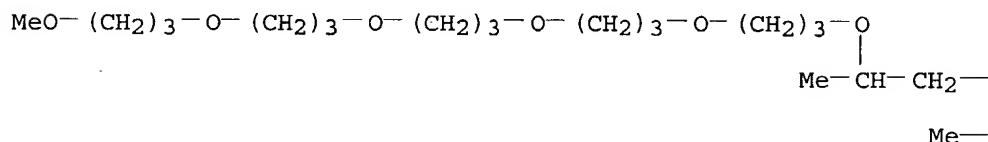
CN 1-Propanol, 3-[3-[3-(1-methylethoxy)propoxy]propoxy]- (9CI) (CA INDEX NAME)

i-PrO-(CH₂)₃-O-(CH₂)₃-O-(CH₂)₃-OH

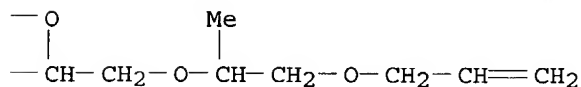
L12 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:771238 CAPLUS
DOCUMENT NUMBER: 130:83889
TITLE: Additives for refrigerator oils
INVENTOR(S): Furukawa, Yutaka; Koderu, Masami
PATENT ASSIGNEE(S): Asahi Glass Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 10316985	A2	19981202	JP 1997-130087	19970520
PRIORITY APPLN. INFO.:				JP 1997-130087	19970520
AB	Additives for refrigerator oils are silicone compds. having required organosiloxane units which directly bond to Si atom with monovalent polyfluoro hydrocarbyl group [e.g., C ₈ F ₁₇ (CH ₂) ₃ -] and organosiloxane units which directly bond to Si atom with oxyhydrocarbyl-containing group.				
IT	218898-40-9DP, reaction products with dimethylsilanediol-methylsilanediol copolymer and F-containing vinyl compds. RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses) (additives for refrigerator oils)				
RN	218898-40-9 CAPLUS				
CN	2,6,10,14,18,22,25,28,31-Nonaoxatetratetracont-33-ene, 23,26,29-trimethyl- (9CI) (CA INDEX NAME)				

PAGE 1-A



PAGE 1-B



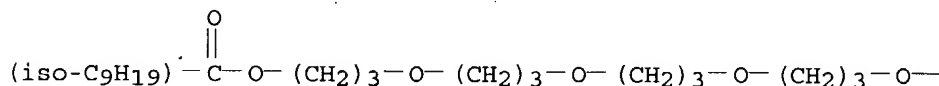
L12 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1989:480100 CAPLUS
DOCUMENT NUMBER: 111:80100
TITLE: Inks for dot printer ink ribbon
INVENTOR(S): Goto, Hiroyuki; Higaki, Yuzo; Fujimoto, Takane
PATENT ASSIGNEE(S): Nisshin Oil Mills Ltd., Japan; Dynic Corp.

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

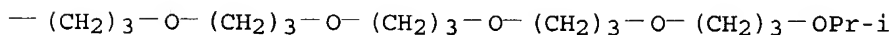
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 63273675	A2	19881110	JP 1987-108039	19870430
JP 08032842	B4	19960329		

PRIORITY APPLN. INFO.: JP 1987-108039 19870430
 AB The title inks contain RCO₂(CH₂CHXO)_nR' [R = C_≥7 (hydroxy)alkyl, (hydroxy)alkenyl; X = H, Me; R' = C_≤10 alkyl, Ph; n = 1-10]. Thus, C.I. Solvent Yellow 19 0.5, C.I. Solvent Red 23 1.2, C.I. Solvent Blue 121 0.4, C.I. Solvent Black 22 1.4, triethylene glycol Me ether pelargonate 95, and additives 0.6% were mixed to give an ink with good storage stability and color d.
 IT 122024-29-7
 RL: USES (Uses)
 (inks containing, for dot printer ribbon, with high color d. and storage stability)
 RN 122024-29-7 CAPLUS
 CN Isodecanoic acid, 37-methyl-4,8,12,16,20,24,28,32,36-nonaaoctatriacont-1-yl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L12 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1982:34816 CAPLUS
 DOCUMENT NUMBER: 96:34816
 TITLE: Stabilization of alkenylanilines
 PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals, Inc., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 56115745	A2	19810911	JP 1980-18572	19800219
JP 62003834	B4	19870127		

PRIORITY APPLN. INFO.: JP 1980-18572 19800219
 AB Alkenylanilines in mixture with phenols were stabilized by addition of >10 weight%

saturated aliphatic alcs., ethers, esters, or aromatic alcs. Thus, 100 weight parts of

an 1:1 mixture of PhOH and 4-isopropenylaniline (99.5% purity) was mixed with 100 weight parts HOCH₂CH₂OH and the mixture kept 6 h at 50° to show 1.0% polymer and 0.1% 2-(4-hydroxyphenyl)-2-(4-aminophenyl)propane, vs. 55.2 and 40.1%, resp., without a stabilizer.

IT 54518-03-5

RL: RCT (Reactant); RACT (Reactant or reagent)
(stabilizer, for alkenylaniline)

RN 54518-03-5 CAPLUS

CN 1-Propanol, 3-[3-(1-methylethoxy)propoxy] - (9CI) (CA INDEX NAME)

i-PrO-(CH₂)₃-O-(CH₂)₃-OH

=> file beilstein

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

19.46

500.09

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-2.77

-2.77

FILE 'BEILSTEIN' ENTERED AT 13:38:43 ON 22 APR 2004

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licensed to Beilstein GmbH and MDL Information Systems GmbH

FILE RELOADED ON OCTOBER 20, 2002

FILE LAST UPDATED ON MARCH 30, 2004

FILE COVERS 1771 TO 2003.

*** FILE CONTAINS 8,932,479 SUBSTANCES ***

>>> PLEASE NOTE: Reaction data and substance data are stored in separate documents and can not be searched together in one query.

Reaction data for BEILSTEIN compounds may be displayed immediately with the display codes PRE (preparations) and REA (reactions). A substance answer set retrieved after the search for a chemical name, a molecular formula or a structure search for example can be restricted to compounds with available reaction information by concatenation with PRE/FA, REA/FA or more general with RX/FA. The BEILSTEIN Registry Number (BRN) is the link between a BEILSTEIN compound and belonging reactions. For more detailed reaction searches BRNs can be selected from substance answer sets and searched in the next step as reaction partner BRNs - Reactant (RX.RBRN) or Product BRN (RX.PBRN). After a search for reaction details substance documents associated with reactants or products may be retrieved by searching RX.PBRNs or RX.RBRNs as BRNs. <<<

>>> FOR SEARCHING PREPARATIONS SEE HELP PRE <<<

* PLEASE NOTE THAT THERE ARE NO FORMATS FREE OF COST. *
* SET NOTICE FEATURE: THE COST ESTIMATES CALCULATED FOR SET NOTICE *
* ARE BASED ON THE HIGHEST PRICE CATEGORY. THEREFORE; THESE *
* ESTIMATES MAY NOT REFLECT THE ACTUAL COSTS. *

* FOR PRICE INFORMATION SEE HELP COST *

=> d his

(FILE 'HOME' ENTERED AT 13:23:21 ON 22 APR 2004)

FILE 'STNGUIDE' ENTERED AT 13:23:37 ON 22 APR 2004

FILE 'REGISTRY' ENTERED AT 13:27:05 ON 22 APR 2004

L1 STRUCTURE UPLOADED
L2 STRUCTURE UPLOADED
L3 STRUCTURE UPLOADED
L4 0 S L3
L5 0 S L3 FULL
L6 STRUCTURE UPLOADED
L7 0 S L6
L8 0 S L6 FULL
L9 STRUCTURE UPLOADED
L10 0 S L9
L11 4 S L9 FULL

FILE 'CAPLUS' ENTERED AT 13:38:11 ON 22 APR 2004

L12 4 S L11

FILE 'BEILSTEIN' ENTERED AT 13:38:43 ON 22 APR 2004

=> s l9 full

FULL SEARCH INITIATED 13:38:55 FILE 'BEILSTEIN'
FULL SCREEN SEARCH COMPLETED - 108754 TO ITERATE

29.8% PROCESSED	32409 ITERATIONS	(4 INCOMPLETE)	4 ANSWERS
57.4% PROCESSED	62407 ITERATIONS	(5 INCOMPLETE)	6 ANSWERS
81.1% PROCESSED	88249 ITERATIONS	(5 INCOMPLETE)	9 ANSWERS
100.0% PROCESSED	108754 ITERATIONS	(5 INCOMPLETE)	9 ANSWERS

SEARCH TIME: 00.01.09

L13 9 SEA SSS FUL L9

=> s l3/com

'COM' IS NOT A VALID FIELD CODE
L14 0 l3/COM

=> d l3/com

'l3' MUST END IN '/Q', '/A', '/L', '/S' OR '/B'
The saved name for a query (or structure or screen set) must end with '/Q'. The saved name for an answer set must end with '/A'. The saved name for an L# list must end with '/L'. SDI request names must end with '/S'. To see a list of all saved query, answer set,, and L# list names for this loginid, enter "DISPLAY SAVED" at an arrow prompt (=>). Enter "DISPLAY SAVED/S" to see a list of SDI request names. Enter "DISPLAY SAVED/B" to see a list of BATCH search requests.

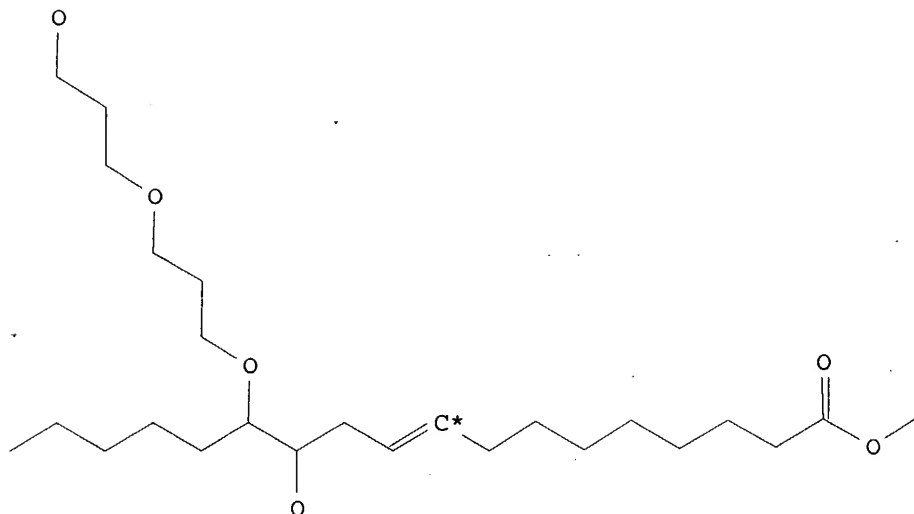
=> s l13/com

L15 4 L13/COM

=> d ide

L15. ANSWER 1 OF 4 BEILSTEIN COPYRIGHT 2004 BEILSTEIN MDL on STN

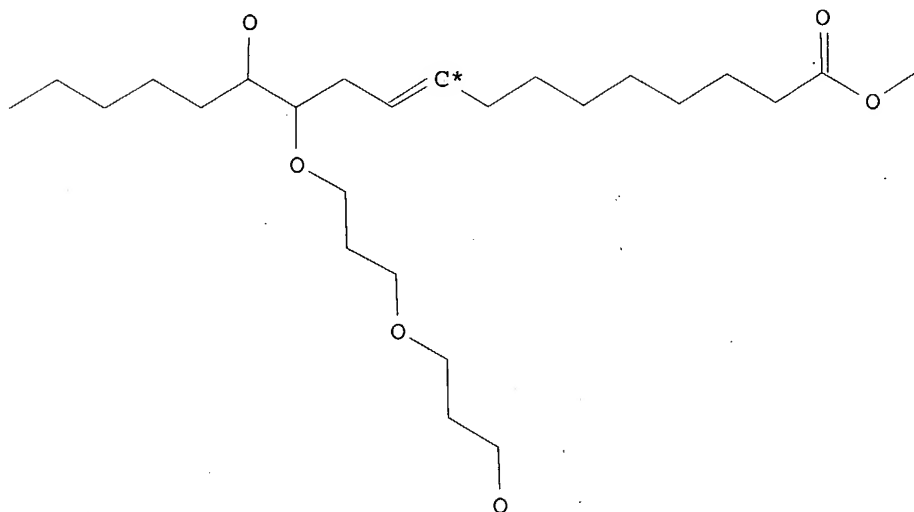
Beilstein Records (BRN): 7826706
 Chemical Name (CN): 12-hydroxy-13-<3-(3-hydroxy-propoxy)-
 propoxy>-octadec-9-enoic acid methyl ester
 Autonom Name (AUN): 12-hydroxy-13-<3-(3-hydroxy-propoxy)-
 propoxy>-octadec-9-enoic acid methyl ester
 Molec. Formula (MF): C25 H48 O6
 Molecular Weight (MW): 444.65
 Lawson Number (LN): 2077, 523, 289
 Compound Type (CTYPE): acyclic
 Constitution ID (CONSID): 6718041
 Tautomer ID (TAUTID): 7433744
 Beilstein Citation (BSO): 6-03
 Entry Date (DED): 1998/04/30
 Update Date (DUPD): 1998/05/04



Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
CN	Chemical Name	1
AUN	Autonomname	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	3
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1
BSO	Beilstein Citation	1
ED	Entry Date	1
UPD	Update Date	1
MS	Mass Spectrum	1
NMR	Nuclear Magnetic Resonance	1

Beilstein Records (BRN): 7826705
 Chemical Name (CN): 13-hydroxy-12-<3-(3-hydroxy-propoxy)-propoxy>-octadec-9-enoic acid methyl ester
 Autonom Name (AUN): 13-hydroxy-12-<3-(3-hydroxy-propoxy)-propoxy>-octadec-9-enoic acid methyl ester
 Molec. Formula (MF): C25 H48 O6
 Molecular Weight (MW): 444.65
 Lawson Number (LN): 2077, 523, 289
 Compound Type (CTYPE): acyclic
 Constitution ID (CONSID): 6718254
 Tautomer ID (TAUTID): 7433513
 Beilstein Citation (BSO): 6-03
 Entry Date (DED): 1998/04/30
 Update Date (DUPD): 1998/05/04



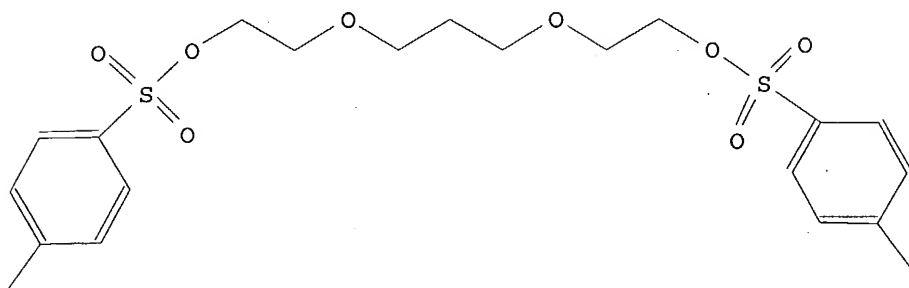
Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
CN	Chemical Name	1
AUN	Autonomname	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	3
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1
BSO	Beilstein Citation	1
ED	Entry Date	1
UPD	Update Date	1
NMR	Nuclear Magnetic Resonance	1

=> d ide 3

L15 ANSWER 3 OF 4 BEILSTEIN COPYRIGHT 2004 BEILSTEIN MDL on STN

Beilstein Records (BRN): 5658971
Chemical Name (CN): 3,7-dioxanonane-1,9-diol ditosylate
Molec. Formula (MF): C22 H30 O8 S2
Molecular Weight (MW): 486.59
Lawson Number (LN): 13813, 524, 523, 514
Compound Type (CTYPE): isocyclic
Constitution ID (CONSID): 4966913
Tautomer ID (TAUTID): 5429438
Beilstein Citation (BSO): 6-11
Entry Date (DED): 1993/02/12
Update Date (DUPD): 1993/02/15



Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
CN	Chemical Name	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	4
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1
BSO	Beilstein Citation	1
ED	Entry Date	1
UPD	Update Date	1

This substance also occurs in Reaction Documents:

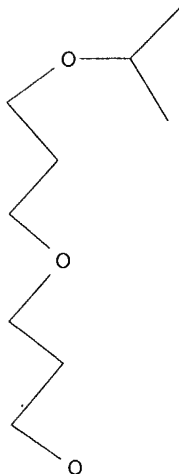
Code	Name	Occurrence
RX	Reaction Documents	2
RXREA	Substance is Reaction Reactant	2

=> d ide 4

L15 ANSWER 4 OF 4 BEILSTEIN COPYRIGHT 2004 BEILSTEIN MDL on STN

Beilstein Records (BRN): 1849201
Beilstein Pref. RN (BPR): 54518-03-5

CAS Reg. No. (RN): 54518-03-5
 Chemical Name (CN): 3-<3-(1-methylethoxy)propoxy>-1-propanol
 Autonom Name (AUN): 3-(3-isopropoxy-propoxy)-propan-1-ol
 Molec. Formula (MF): C9 H20 O3
 Molecular Weight (MW): 176.26
 Lawson Number (LN): 523, 308
 Compound Type (CTYPE): acyclic
 Constitution ID (CONSID): 1671846
 Tautomer ID (TAUTID): 1744135
 Entry Date (DED): 1989/06/29
 Update Date (DUPD): 1994/07/22



Field Availability:

Code	Name	Occurrence
BRN	Beilstein Records	1
BPR	Beilstein Preferred RN	1
RN	CAS Registry Number	1
CN	Chemical Name	1
AUN	Autonomname	1
MF	Molecular Formula	1
FW	Formular Weight	1
LN	Lawson Number	2
CTYPE	Compound Type	1
CONSID	Constitution ID	1
TAUTID	Tautomer ID	1
ED	Entry Date	1
UPD	Update Date	1
XREF	Crossfile Reference	1

=>

Connection closed by remote host

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:ssspta1204jxv

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * Welcome to STN International * * * * *

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America
NEWS 2 "Ask CAS" for self-help around the clock
NEWS 3 JAN 27 Source of Registration (SR) information in REGISTRY updated
and searchable
NEWS 4 JAN 27 A new search aid, the Company Name Thesaurus, available in
CA/CAplus
NEWS 5 FEB 05 German (DE) application and patent publication number format
changes
NEWS 6 MAR 03 MEDLINE and LMEDLINE reloaded
NEWS 7 MAR 03 MEDLINE file segment of TOXCENTER reloaded
NEWS 8 MAR 03 FRANCEPAT now available on STN
NEWS 9 MAR 29 Pharmaceutical Substances (PS) now available on STN
NEWS 10 MAR 29 WPIFV now available on STN
NEWS 11 MAR 29 No connect hour charges in WPIFV until May 1, 2004
NEWS 12 MAR 29 New monthly current-awareness alert (SDI) frequency in RAPRA

NEWS EXPRESS MARCH 31 CURRENT WINDOWS VERSION IS V7.00A, CURRENT
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

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STRUCTURE FILE UPDATES: 21 APR 2004 HIGHEST RN 676437-01-7

DICTIONARY FILE UPDATES: 21 APR 2004 HIGHEST RN 676437-01-7

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

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Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
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=> file caplus		
COST IN U.S. DOLLARS	SINCE FILE	TOTAL
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FULL ESTIMATED COST	0.42	0.63

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FILE COVERS 1907 - 22 Apr 2004 VOL 140 ISS 17
FILE LAST UPDATED: 21 Apr 2004 (20040421/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s catalyst (3w) 100nm
653953 CATALYST
658295 CATALYSTS
837762 CATALYST
(CATALYST OR CATALYSTS)
712 100NM
L1 1 CATALYST (3W) 100NM

=> d

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:635822 CAPLUS
TI Study on the bimetallic catalysts for residue suspended bed hydrocracking
AU Guan, Cuishi; Wang, Zongxian
CS State Key Laboratory of Heavy Oil Processing, University of Petroleum, Dongying Shandong, 257061, Peop. Rep. China
SO Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 (2003), PETR-006 Publisher: American Chemical Society, Washington, D. C.
CODEN: 69EKY9
DT Conference; Meeting Abstract
LA English

=> d it

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN

=> d ibib abs

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:635822 CAPLUS
TITLE: Study on the bimetallic catalysts for residue
suspended bed hydrocracking
AUTHOR(S): Guan, Cuishi; Wang, Zongxian
CORPORATE SOURCE: State Key Laboratory of Heavy Oil Processing,
University of Petroleum, Dongying Shandong, 257061,
Peop. Rep. China
SOURCE: Abstracts of Papers, 226th ACS National Meeting, New
York, NY, United States, September 7-11, 2003 (2003),
PETR-006. American Chemical Society: Washington, D.
C.
CODEN: 69EKY9
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English

AB The bimetallic catalyst, derived from water-soluble precursors, was used for
upgrading Kelamayi AR at an initial H₂ pressure of 7.0Mpa, 436°C, for 1 h.
No coking (toluene insolubles <1wt%), and high yield of the distillates
(<450°C, about 60wt%) show that the catalyst has a high activity in
inhibiting coking and hydrocracking. The optimal concns. of Mo and Fe in
the bimetallic catalysts are 15.apprx.25ppm and 1100.apprx.1300ppm in the
studied range resp. The Mo-Fe bimetallic catalyst recovered after
sulfuration reaction was analyzed by XPS and XRD and TEM. XPS anal.
confirms that Mo and Fe are present as molybdenum sulfide and iron
sulfide. About 46% of Molybdenum is in the state of MoS₂ and 54% is in
the state of MoO₃ after the sulfuration reaction according to the spectrum
of XPS. XRD anal. offers a hypothesis that the 'nature of synergism
between Mo and Fe in the bimetallic catalyst is "phys. and chemical
dispersion", which can inhibit the crystals to grow up. Compared with the
grain of oil-soluble catalysts (20.apprx.50nm), the ones of water-soluble
catalysts (about 100nm) reclaimed after sulfuration
reaction are large, as showing in the TEM spectrum.

=> d his

(FILE 'HOME' ENTERED AT 17:12:18 ON 22 APR 2004)

FILE 'REGISTRY' ENTERED AT 17:12:26 ON 22 APR 2004

FILE 'CAPLUS' ENTERED AT 17:12:40 ON 22 APR 2004

L1 1 S CATALYST (3W) 100NM

=> s pore size (s) catalyst

118358 PORE
66930 PORES
160117 PORE
(PORE OR PORES)
845304 SIZE
113850 SIZES
907070 SIZE
(SIZE OR SIZES)
35023 PORE SIZE
(PORE(W)SIZE)
653953 CATALYST
658295 CATALYSTS
837762 CATALYST
(CATALYST OR CATALYSTS)

L2 2856 PORE SIZE (S) CATALYST

=> s 12 and 1000nm

76 1000NM

L3 0 L2 AND 1000NM

=> s 12 and 1000

352007 1000

L4 158 L2 AND 1000

=> d ibib abs hitstr

L4 ANSWER 1 OF 158 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:59758 CAPLUS

DOCUMENT NUMBER: 140:79582

TITLE: Selective para-alkylation of ethylbenzene to p-alkylethylbenzene over pore-size-regulated high-silica gallium-exchanged zeolites

INVENTOR(S): Bhat, Yajnavalkya Subray; Das, Jagannath; Halgeri, Anand Bhimarao; Bhardwaj, Ishwar Singh

PATENT ASSIGNEE(S): Indian Petrochemicals Corp. Ltd., India

SOURCE: Indian, 17 pp.

CODEN: INXXAP

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
IN 178216	A	19970315	IN 1994-BO58	19940221
PRIORITY APPLN. INFO.:			IN 1994-BO58	19940221
AB	Production of para-alkylethylbenzenes with high (95-100%) para-selectivity is carried out by selective p-alkylation of ethylbenzene, especially with a suitable alc., at 523-723 K in the presence of an acid-form high-silica (Si-Al ratio 70-500:1) zeolite composite consisting of amorphous silica and a galloaluminosilicate (Si-Ge ratio 1000-1500:1) treated with tetra-Et orthosilicate to control the pore size. P-Alkylethylbenzene is separated as the heavier bottoms product of the reaction mixture, in which unreacted ethylbenzene is the lighter overhead or top product. The preferred product is p-diethylbenzene upon alkylation of ethylbenzene with EtOH at 1-40:1 mol ratio ethylbenzene-EtOH and weight space velocity of 0.5-10 h-1.			

=> d ibib abs 155-158

L4 ANSWER 155 OF 158 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1962:28672 CAPLUS

DOCUMENT NUMBER: 56:28672

ORIGINAL REFERENCE NO.: 56:5441g-h,5442a

TITLE: Alumina catalyst of high surface area

INVENTOR(S): Bertolacini, Ralph J.

PATENT ASSIGNEE(S): Standard Oil Co.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3009885		19580000	US	
AB	The surface area of an AlO3 catalyst is increased by treating with 5-98% by weight H2O2 in a H2O2:-Al2O3 ratio of 0.1-10. An Al2O3 hydrosol containing			

6.4% Al₂O₃ is prepared (U.S. 2,274,634, CA 36, 47045). A portion is dried for 4 hrs. at 400° F. and calcined for 6 hrs. at 1000 ° F. To another portion, enough H₂O₂ (30%) is added to give a H₂O₂:Al₂O₃ weight ratio of 1:1. The mixture is stirred for 1 hr. at ambient temperature and atmospheric pressure, dried for 4 hrs. at 400° F., and calcined for 6 hrs. at 1000.degree. F. The surface area, micro-pore volume, and average pore diameter are 341 sq. m./g., 0.506 cc./g., and 60.2 A., resp., for the treated Al₂O₃ and 231 sq. m./g., 0.433 cc./g., and 75.1 A., resp., for the untreated portion. The activity and regenerating properties of a Pt-Cl catalyst are improved when H₂O₂-treated Al₂O₃ is used in its preparation

L4 ANSWER 156 OF 158 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1960:31388 CAPLUS
 DOCUMENT NUMBER: 54:31388
 ORIGINAL REFERENCE NO.: 54:6112b-f
 TITLE: Manufacture of lubricants by irradiation of hydrocarbons
 PATENT ASSIGNEE(S): Esso Research and Engineering Co.
 DOCUMENT TYPE: Patent
 LANGUAGE: Unavailable
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 823099		19591104	GB	

AB Lubricants, with viscosities from 45 to 1000 Saybolt Universal sec. at 210°F. and viscosity indexes >100 are prepared by subjecting paraffinic hydrocarbons to high-intensity ionizing radiation comprising a slow neutron flux of 1011-1016 neutrons/sq. cm./sec. and a γ-ray flux of 104 to 6 + 108 r./hr. in the presence of subdivided inorg. solids. C10-C18 hydrocarbons are preferred. The inorg. solids are metals or metal oxides with surface areas of 50-600 (preferably 100-300) sq. m./g. and pore sizes of 20-150 (preferably 30-100)A. The metals include Al, Mg, Ti, V, Si, Pt, Cr, Ni, Fe, and Cu. For example, equal vols. of cetane and a catalyst were irradiated for 10 days in an atomic pile having a total power of 24 mega-w. and the following flux distribution at the point of irradiation: slow-neutron flux (0.03 e.v.) 2.5 + 1012 neutrons/sq. cm./sec., fast-neutron flux (>1 m.e.v.) 0.5 + 1012 neutrons/sq. cm./sec., and γ-ray intensity 1.7 + 106 r./hr. The temperature was 350-400°F. and the pressure 1 atmospheric. One catalyst tested was freshly calcined 13% Al₂O₃ on SiO₂ in the form of 3/16 + 3/16-in. cylinders with a surface area of 500 sq. m./g. Another catalyst contained 0.6% Pt and 0.6% Cl on alcoholate Al₂O₃; it had a surface area of about 300 sq. m./g. and a pore size of 50-80 A. The % yields of products from irradiation using the 2 catalysts were as follows: wet gas (7.6, 8.2); liquids b. <430°F. (6.7, 19.8); b. 430-540° (2.6, 5.1); b. 540-60° (17.2, 22.2), b. >560° (62.3, 41.1), and C (3.5, 3.5). The cuts b. >560° were evaluated as lubricating oil stocks. The products produced by use of the 2 catalysts had the following resp. properties: Saybolt Universal viscosity at 100°F. (1573.5, 322.6) and at 210°F. (138.8, 63.15); and viscosity index (116, 138).

L4 ANSWER 157 OF 158 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1958:38632 CAPLUS
 DOCUMENT NUMBER: 52:38632
 ORIGINAL REFERENCE NO.: 52:6908i,6909a
 TITLE: Physical and chemical properties of WS₂-catalysts. I. Effect of thermal treatment on the composition and adsorption properties of WS₂ prepared by the decomposition of ammonium thiotungstate
 AUTHOR(S): Samoilov, S. M.; Rubinshtein, A. M.

SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya
(1957) 1158-65
CODEN: IASKA6; ISSN: 0002-3353

DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The effect of heating **catalysts** having an initial composition of WS2.30 in a vacuum or at atmospheric pressure at temperature up to 1000 ° was determined by measuring the adsorption of N, the sp. surface, and the **pore size** and by determining the chemical composition of the samples. The heating brings about the removal of the nonstoichiometric S from the sample. A parallelism was observed between the decrease in the S and an increase in the sp. surface and pore volume. A decrease in sp. surface due to recrystn. becomes significant for temps. above 600°.

L4 ANSWER 158 OF 158 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1951:23648 CAPLUS

DOCUMENT NUMBER: 45:23648

ORIGINAL REFERENCE NO.: 45:4123e-i

TITLE: Effect of heating on the catalytic activity of silica gel

AUTHOR(S): Dzis'ko, V. A.; Vishnevskaya, A. A.; Chesalova, V. S.

CORPORATE SOURCE: Karpov Phys.-Chem. Inst., Moscow

SOURCE: Zhurnal Fizicheskoi Khimii (1950), 24, 1416-19

CODEN: ZFKHA9; ISSN: 0044-4537

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Three silica gel **catalysts** are prepared with the following pore vols. (cc./g.), sp. surfaces (sq.m./g.), and mean **pore sizes** (A.): (A) 0.24, 400, 10; (B) 0.85, 450, 27; (C) 1.05, 540, 20. The pore-size distribution is narrow for A and B but wide for C. Firstly, the effect of heating on the H2O content of the gels is studied between 115 and 1000.degree.. The total H2O content is determined after heating at 1100°. The adsorbed H2O is determined by weighing after drying at 115°. Water held structurally at various temps. is determined by weighing. Assuming that the structural H2O is held as OH groups covering the surface of the gel (15 + 10-16 sq. cm./OH), one can compute the fraction of surface f covered by OH at all temps. The H2O content follows the decrease in sp. surface; f for B and C stays approx. constant between 450 and 1000.degree., whereas the sp. surface area drops from 420 and 450 down to 70 and 200, resp. The value of f is about 0.5 in this temperature range. At lower temps., f is higher. At 115°, f = 1.62 for A and 1.1 for C. This indicates the presence of hydrates, in small quantity. For B at 115° and for A and C from 300° on, f is less than unity. Thus the decrease in surface area due to heating corresponds to the evolution of structural H2O, and as a consequence f remains approx. constant. Secondly, the hydrolysis of PhCl is used as a test reaction (Boreskov and Dzis'ko, C.A. 45, 2759g) for measuring the effect of heating on the catalytic activity per unit surface area. The latter drops only slightly in the case of A which is not temperature resistant, but in the case of B and C, it increases between 600 and 1000.degree.. This is due to the fact that the decrease in surface corresponds to the destruction of pores that, because of their small size, do not partake in the reaction. Thus the rate constant decreases less rapidly than the surface area and the activity per unit surface area rises on heating.

=>

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ENTRY	SESSION
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FULL ESTIMATED COST

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FILE COVERS 1907 - 23 Apr 2004 VOL 140 ISS 18
FILE LAST UPDATED: 22 Apr 2004 (20040422/ED)

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=> s 131:89141/dn
L1 1 131:89141/DN

=> d

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:421733 CAPLUS
DN 131:89141
TI Preparation of acrylic-based copolymer latex coatings with low environmental toxicity
IN Sugerman, Gerald
PA USA
SO PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9932563	A2	19990701	WO 1997-US24224	19971219
	W: AU, BR, CA, HU, JP, MX, NO, RU, SE, SG, TR, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2314975	AA	19990701	CA 1997-2314975	19971219
	AU 9860143	A1	19990712	AU 1998-60143	19971219
	BR 9714916	A	20001226	BR 1997-14916	19971219
PRAI	WO 1997-US24224	A	19971219		

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NEWS 5 FEB 05 German (DE) application and patent publication number format

changes

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NEWS 7 MAR 03 MEDLINE file segment of TOXCENTER reloaded
NEWS 8 MAR 03 FRANCEPAT now available on STN
NEWS 9 MAR 29 Pharmaceutical Substances (PS) now available on STN
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FILE COVERS 1907 - 23 Apr 2004 VOL 140 ISS 18

FILE LAST UPDATED: 22 Apr 2004 (20040422/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s washing (4w) detergent composition

142921 WASHING

13293 WASHINGS

153703 WASHING

(WASHING OR WASHINGS)

73145 DETERGENT
64517 DETERGENTS
100526 DETERGENT
 (DETERGENT OR DETERGENTS)
614697 COMPOSITION
271551 COMPOSITIONS
881126 COMPOSITION
 (COMPOSITION OR COMPOSITIONS)
1275100 COMPN
509980 COMPNS
1560450 COMPN
 (COMPONENT OR COMPONENTS)
1993764 COMPOSITION
 (COMPOSITION OR COMPONENT)
9878 DETERGENT COMPOSITION
 (DETERGENT(W) COMPOSITION)
L1 69 WASHING (4W) DETERGENT COMPOSITION

=> d ti 1-10

L1 ANSWER 1 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Liquid dish-washing detergent compositions

L1 ANSWER 2 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Fusion proteins of α -amylases from Bacillus with improved washed performance and their use in detergents

L1 ANSWER 3 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Contaminated surface polishing-washing detergent composition containing carbonized rice bran and phenolic resin

L1 ANSWER 4 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Detergent compositions with good scale-removing properties

L1 ANSWER 5 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Low-foaming detergent compositions with good detergency for linen suppliers

L1 ANSWER 6 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Washing of fabrics stained with blood with alkaline detergents

L1 ANSWER 7 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Detergent compositions containing inorganic salts and useful for washing of beer and beverage bottles

L1 ANSWER 8 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Detergent compositions for jet washing with controllable viscosity and freedom from dripping

L1 ANSWER 9 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Peroxide-based bleaching laundry dish washing detergent compositions

L1 ANSWER 10 OF 69 CAPLUS COPYRIGHT 2004 ACS on STN
TI Car washing detergent composition

=> s l1 and amine

244089 AMINE
233051 AMINES
375309 AMINE
 (AMINE OR AMINES)

L2 9 L1 AND AMINE

=> d ibib abs hitstr 1-9

L2 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:311430 CAPLUS

DOCUMENT NUMBER: 130:339737

TITLE: Alkaline detergent for beverage and food industry and its use

INVENTOR(S): Grajecki, Christiana; Schmalz, Dietmar

PATENT ASSIGNEE(S): Dipl.-Ing. Ulrich Grajecki (G.m.b.H. und Co.), Germany

SOURCE: Ger. Offen., 6 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19749964	A1	19990506	DE 1997-19749964	19971104
PRIORITY APPLN. INFO.:			DE 1997-19749964	19971104
OTHER SOURCE(S):			MARPAT 130:339737	

AB Alkaline detergents for cleaning food and beverage containers contain 0.0001-1.0% HCHO or HCHO generator and 0.0001-1.0% R1R2R3N (R1, R2, R3 = H, benzyl C1-22-alkyl, or amino- and/or imino-substituted C1-10-alkyl; R1R2 together with the N may form a 5- or 6-membered heterocyclic ring) as microbicides. The comps. are especially suitable for cleaning polyester bottles at low temps. An example of a concentrate is based on water 44.67, hexamethylenetetramine 12.00, Na cumenesulfonate 12.00, Plurafac LF 131 10.00, Pluronic 3.00, N,N-bis(3-aminopropyl)dodecylamine 18.33, and tartrazine 1.30%. This concentrate (0.05%) is added to 2% aqueous NaOH to form a cleaning composition which is effective at 20°.

L2 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:686703 CAPLUS

DOCUMENT NUMBER: 123:59685

TITLE: Machine dishwashing method employing a metallo catalyst and enzymic source of hydrogen peroxide

INVENTOR(S): Moens, Marnix Karel Christiane

PATENT ASSIGNEE(S): Procter and Gamble Co., USA

SOURCE: PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9423637	A1	19941027	WO 1994-US3169	19940323
W: CA, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2160231	AA	19941027	CA 1994-2160231	19940323
EP 692947	A1	19960124	EP 1994-913945	19940323
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
US 5670468	A	19970923	US 1995-537652	19951010
PRIORITY APPLN. INFO.:			EP 1993-870066	19930409
			WO 1994-US3169	19940323

OTHER SOURCE(S): MARPAT 123:59685

AB The title method, which prevents staining of the surfaces of dishwashing machines, plastic (e.g., polypropene) containers, etc., by colored food soils such as tomato or black currant juice, involves washing with a detergent composition containing a metallo catalyst selected from a metallo porphin (e.g., ferric tetrasulfonated

tetraphenylporphin), a metallo porphyrin, a metallo phthalocyanine, and their water-soluble or water-dispersible derivs., an enzymic system capable of generating H₂O₂ (e.g., glucose and glucose oxidase), an **amine** base catalyst stabilizer (e.g., imidazole), and a polymer [e.g., polyethylene glycol, poly(vinylpyrrolidone), or poly(vinyl alc.)] capable of reducing the deposition of catalyst onto articles in the wash.

L2 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:209204 CAPLUS
DOCUMENT NUMBER: 104:209204
TITLE: Laundry additive
INVENTOR(S): Koester, Klaus; Carduck, Franz Josef; Wilsberg, Heinz
Manfred; Puchta, Rolf
PATENT ASSIGNEE(S): Henkel K.-G.a.A., Fed. Rep. Ger.
SOURCE: Ger. Offen., 21 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3422055	A1	19851219	DE 1984-3422055	19840614
EP 164703	A2	19851218	EP 1985-107057	19850607
EP 164703	A3	19860402		
EP 164703	B1	19900117		

R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE

JP 61012796	A2	19860121	JP 1985-129081	19850612
ES 544107	A1	19860116	ES 1985-544107	19850613
CA 1242949	A1	19881011	CA 1985-483943	19850613

PRIORITY APPLN. INFO.: DE 1984-3422055 19840614

AB Laundry additives, easily soluble in cold water and cold washing liquors, are prepared which comprise a mixture of components and, optionally, additives embedded in organic, flexible, film-forming, water-soluble polymers. The mixture

contains ≥ 2 of the following components: (a) ≥ 1 nonionic surfactant optionally containing an antigelling agent, (b) ≥ 1 activator for a per compound, (c) ≥ 1 N-containing compound selected from quaternary ammonium compds. with 1 C₁₀-20 alkyl or alkenyl group as well as C₁-4 alkyl groups, adducts of 1-6 mols ethylene oxide and 1 mol primary C₁₀-16 alkyl- or alkenylamine, and compds. RNHCH₂CH₂CO₂Na (R = C₁₀-18 alkyl or alkenyl). Thus, a solution was prepared at 100° from water 90, poly(vinyl alc.) (mol. weight 15,000 83% saponified) 39, and copolymer (mol.

weight

22000, 86% saponified) of vinyl alc. and internal plasticizing units using 39 g and mixed with glycerol 20, polyethylene glycol (mol. weight 4000) 4, methyl cellulose 4, and cellulose fibers (≤ 1 mm) 4 g. This mixture was kneaded at 40° with a paste prepared at 50° from (Ac₂NCH₂)₂ 97, ethoxylated (7 mols) (C₁₄-15) oxo alcs. 104, C₁₄H₂₉NMe₃Br 37, 50% aqueous ethylenediaminetetrakis(methylenephosphonic acid) hexa-Na salt solution 12, HOCHMeCH₂OH 37, glycerol 37, ethoxylated (2 mols) oleyl-cetyl alc. 11, and poly(dimethylsiloxane) 6 g. The resulting composition was passed between rolls heated at 70° to give a 0.7-mm film containing 6% water. The film was cut into pieces (25 cm long, 16 cm wide) for use as a laundry additive which improved the **washing** efficiency of **detergent compns.**

L2 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1984:553875 CAPLUS
DOCUMENT NUMBER: 101:153875
TITLE: Fabric **washing** process and **detergent composition**
INVENTOR(S): Davies, James Francis

PATENT ASSIGNEE(S): Unilever PLC, UK; Unilever N. V.
 SOURCE: Eur. Pat. Appl., 30 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 113978	A1	19840725	EP 1983-307640	19831215
EP 113978	B1	19870826		
R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE				
AU 8322364	A1	19840621	AU 1983-22364	19831213
AU 551234	B2	19860424		
ZA 8309296	A	19850731	ZA 1983-9296	19831214
AT 29151	E	19870915	AT 1983-307640	19831215
NO 8304649	A	19840618	NO 1983-4649	19831216
PRIORITY APPLN. INFO.:			GB 1982-36003	19821217
			EP 1983-307640	19831215

AB Builder particles for use in particulate detergent compns. comprise an alkylbenzenesulfonate (dispersant) and alkali metal or **amine** salts of saturated fatty acid containing ≥ 16 C atoms. Thus, particles comprising 2 parts Na salt of a mixture of C16 and C18 fatty acids and 1 part Na dodecylbenzenesulfonate [25155-30-0] gave effective softening of hard water at .apprx.20°. Particles containing only the soap had little softening effect in hard water.

L2 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1979:40161 CAPLUS
 DOCUMENT NUMBER: 90:40161
 TITLE: Washing of a textile printing material made from acetate or triacetate fibers
 INVENTOR(S): Libkind, R. M.; Lazovatskaya, Zh. B.; Anishchuk, E. N.; Bedina, Zh. A.
 PATENT ASSIGNEE(S): USSR
 SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1978, 55(41), 110.
 CODEN: URXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Russian
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 631576	T	19781105	SU 1976-2365339	19760524
PRIORITY APPLN. INFO.:			SU 1976-2365339	19760524

AB The degree of whiteness of the title material is increased by washing successively with H2O and with H2O containing 1-2 g/L polyoxyethylene glycol derivs. of C10-13 synthetic aliphatic **amines** (containing 14-18 OCH2CH2 groups) for 75-100 min.

L2 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1977:173047 CAPLUS
 DOCUMENT NUMBER: 86:173047
 TITLE: Bleeding dye composition soluble in water and nonpolar solvents
 INVENTOR(S): Kuhn, Hans Heinrich; Hauser, Peter Jacob
 PATENT ASSIGNEE(S): Deering Milliken Research Corp., USA
 SOURCE: Ger. Offen., 12 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2638542	A1	19770303	DE 1976-2638542	19760826
CA 1081906	A1	19800722	CA 1976-259534	19760820
GB 1497017	A	19780105	GB 1976-35462	19760826
FR 2322908	A1	19770401	FR 1976-26287	19760831
FR 2322908	B1	19810320		
BE 845749	A1	19761231	BE 1976-170271	19760901
DK 7603952	A	19770303	DK 1976-3952	19760901
DK 147395	B	19840716		
DK 147395	C	19850204		
NL 7609737	A	19770304	NL 1976-9737	19760901
JP 52030821	A2	19770308	JP 1976-104365	19760902
JP 59033622	B4	19840816		
US 4113721	A	19780912	US 1977-815122	19770713

PRIORITY APPLN. INFO.: US 1975-609369 19750902

AB Azo and triarylmethane dyes which are easily and completely removed from synthetic and natural fiber textiles by **washing** in an aqueous **detergent composition** and by dry cleaning are manufactured by treating a aromatic **amine** with a mixture of ethylene oxide and propylene oxide to form a polyether and coupling with an aromatic diazonium compound containing a sulfo group or condensing with a formylbenzenesulfonic acid derivative under acid conditions followed by oxidation. Thus, m-MeC₆H₄N(CH₂CH₂OH)₂ 10 was treated with a mixture of ethylene oxide 136 and propylene oxide 180 kg to give a polyether [62534-67-2] which was coupled with 2,5-(NaO₃S)₂C₆H₃N₂⁺ [62502-15-2] to give a yellow dye solution from which the dye could be isolated by distilling the H₂O.

L2 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1973:480674 CAPLUS

DOCUMENT NUMBER: 79:80674

TITLE: 3-(Acyloxy)-2-hydroxypropyltrialkylammonium compounds as softeners in detergents

INVENTOR(S): Nikolaus, Peter; Ecker, Hans W.

PATENT ASSIGNEE(S): Henkel und Cie. G.m.b.H.

SOURCE: Ger. Offen., 34 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2164741	A1	19730712	DE 1971-2164741	19711227

PRIORITY APPLN. INFO.: DE 1971-2164741 19711227

AB Fabric-softening properties of conventional detergent compns. were improved by addition of 5-20% of a 3-(acyloxy)-2-hydroxypropyltrialkylammonium compound formed by the reaction of a dicarboxylic acid and a tertiary **amine** with epichlorohydrin. Thus, heating a solution of 0.30 mole oxalic acid [144-62-7] and 0.30 mole epichlorohydrin [106-89-8] in 250 ml iso-PROH with 0.27 mole dimethyldodecylamine [112-18-5] at 60-5.deg. for 30 hr gave 3-oxaloxy-2-hydroxypropyldimethyldodecylammonium chloride (I) [41935-41-5]. 3,3'-Maloyldioxybis(2-hydroxypropylmethyldidodecylammonium chloride) (II) [41935-42-6] was similarly prepared from malonic acid [141-82-2] and methyldidodecylamine [2915-90-4]. Brushed cotton cloth after 5 **washings** with **detergent compns.** containing I or II had hand superior to compns. containing no I or II, or containing prior-art ammonium compds.

L2 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1972:477101 CAPLUS
 DOCUMENT NUMBER: 77:77101
 TITLE: Detergent preparation containing aminopolycarbamide resins
 INVENTOR(S): Grand, Paul Sheldon; Wixon, Harold Eugene
 PATENT ASSIGNEE(S): Colgate-Palmolive Co.
 SOURCE: Ger. Offen., 70 pp.
 CODEN: GWXXBX
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2155224	A	19720518	DE 1971-2155224	19711106
US 3703480	A	19721121	US 1970-90133	19701116
US 3726815	A	19730410	US 1970-90154	19701116
AU 7134526	A1	19730419	AU 1971-34526	19711013
CA 970909	A1	19750715	CA 1971-125548	19711019
GB 1357960	A	19740626	GB 1971-49376	19711025
BE 775158	A1	19720301	BE 1971-110341	19711110
CA 955390	A1	19741001	CA 1971-127541	19711112
AT 322708	B	19750610	AT 1971-9765	19711112
IT 986008	A	19750110	IT 1971-54076	19711113
ES 397034	A1	19750416	ES 1971-397034	19711115
SE 401608	C	19780831	SE 1971-14616	19711115
NL 7115801	A	19720518	NL 1971-15801	19711116
FR 2114751	A5	19720630	FR 1971-40963	19711116
BR 7107620	A0	19730220	BR 1971-7620	19711116
US 3832310	A	19740827	US 1972-308885	19721122
US 3875071	A	19750401	US 1972-308884	19721122
US 4312855	A	19820126	US 1977-760619	19770114
PRIORITY APPLN. INFO.:			US 1970-90133	19701116
			US 1970-90154	19701116
			US 1972-308883	19721122

AB A N-methylbis(2-aminopropyl)amine-urea resin (I) [35705-32-9] having the repeating unit (CH₂)₃NMe(CH₂)₃NHCONH, a 1,4-bis(3-aminopropyl)piperazine-urea resin [35705-33-0], or a similar resin is added to detergent compns. containing bactericides (e.g., 2-pyridinethiol 1-oxide salts, salicylanilides, halogenated bisphenols), fungicides (e.g., ethylene thiourea), uv light absorbers (e.g., hydroxybenzophenones), fluorescent whiteners (e.g., stilbenes, pyrazolines, or styrylnaphthoxazoles), fabric softening agents (e.g., dimethyldi(hydrogenated tallow alkyl)ammonium chloride), and/or other additives to increase the amount of each additive remaining on hair, skin, or textiles after **washing** with the **detergent compns.** and rinsing. Thus, after being dipped in 8.96 g water containing 0.04 g 2-pyridinethiol 1-oxide Zn salt and 0.5% I and then rinsed, a gelatin test wafer contains 122 µg of the Zn salt, compared with 40 µg when the solution contains no I.

L2 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1969:482933 CAPLUS
 DOCUMENT NUMBER: 71:82933
 TITLE: Fabric softening agents
 INVENTOR(S): Koebner, Adolf; Potts, Herbert A.
 PATENT ASSIGNEE(S): Marchon Products Ltd.
 SOURCE: Brit., 5 pp.
 CODEN: BRXXAA
 DOCUMENT TYPE: Patent
 LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
GB 1161552		19690813	GB	19660128

AB Certain diquatary diammonium salt surfactants are effective softeners in aqueous rinse solns. for fabrics and fibers. The salts are soluble in H2O to the extent of ≥ 0.1 g./l. at 20°. Useful aqueous compns. contain the above salt 2-10, cationic surfactants ≥ 3 and nonionic surfactants 1-5 weight %. Thus, a solution of 285 g. dimethyltallow-amine (I) (tallow = a mixture of cetyl and stearyl groups derived from tallow (fatty acids) in 500 g. iso-PrOH had .apprx.100 ml. 10N HCl added to neutralize the amine. After addition of 93 g. epichlorohydrin, the mixture was stirred at 60° for 6 hrs., a further addition of 285 g. I made and the mixture again stirred for 6 hrs. at 60°. This gave a 50-5% aqueous solution of N,N,N',N'-tetramethyl-N,N'-ditallow-2-hydroxy-1,3-propylenediammonium dichloride (II) from which free amine was removed by addition of Me2SO4. A mixture of II 5, lauric monoethanolamide 2, iso-PrOH, 5, and H2O 88 weight % had an excellent softening effect on fabrics when added to the final rinse after washing with alkylbenzenesulfonates or alkylsulfonate detergent compns.

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US97/24224 (22) International Filing Date: 19 December 1997 (19.12.97) (71)(72) Applicant and Inventor: SUGERMAN, Gerald [US/US]; 8 Cambridge Drive, Allendale, NJ 07401 (US). (74) Agent: FIDLER, Roger, L.; 163 South Street, Hackensack, NJ 07601 (US).		(81) Designated States: AU, BR, CA, HU, JP, MX, NO, RU, SE, SG, TR, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>Without international search report and to be republished upon receipt of that report.</i>
(54) Title: LOW ENVIRONMENTAL TOXICITY LATEX COATINGS (57) Abstract Combinations of nonvolatile reactive amines, and hydroxyl bearing, unsaturated esters and/or ethers and/or ether-esters (and/or combinations of non-hydroxyl bearing, unsaturated esters and/or ethers and/or ether-esters, and saturated hydroxyl bearing etherified and/or esterified oligomeric glycols and/or oligools), as replacements for conventionally employed volatile amines and/or ammonia as neutralizers, and organic solvents as coalescents respectively, has been found to enable the production of economical, low to no VOC acrylic and vinyl copolymer latex based coatings, paints, and inks. Further enhancement may be had by substitution of hypersurfactants, in place of conventional soaps and/or dispersants and/or detergents, in combination with the aforementioned nonvolatile reactive amines, particularly as particulate dispersants in pigmented and/or reinforced coatings.		

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EE	Estonia						

LOW ENVIRONMENTAL TOXICITY LATEX COATINGS

1 Background of The Invention:

2 The use of ammonia and/or volatile amines as neutralizing
3 agents and/or stabilizers, and of alcohols, glycols, and glycol
4 monoethers and monoesters, often in combination, at levels to 40%
5 by volume (exclusive of water) has been employed for more than
6 fifty years to achieve the coalescence of latex solids in acrylic,
7 polyvinyl acetate and related copolymer resins based coatings.
8 The volatilization of these conventional neutralizers, and
9 coalescing components, after achieving film coalescence is
10 normally required in order to inhibit the resultant film's
11 breakdown (reversion) in the presence of humid environments, and
12 to provide acceptable wear and stain resistance to the dried film.

13 Recent concerns regarding the environmental degradation
14 (predominantly low level ozone formation), and the health and fire
15 hazards associated with exposure to ammonia, volatile amines and
16 volatile organics (VOCs), has led to increasingly strict
17 regulatory limitations on the nature, and proportions, of VOCs
18 which may be employed in coatings. One technique that has been
19 employed in order to comply with said limitations in latex coating
20 applications is the development of self coalescing latex resins
21 which require no coalescents. However, to date, such materials
22 have had the disadvantage of being limited to low Tg film formers
23 with poor performance properties.

24 Subject of The Invention:

25 This invention teaches the use of low levels of combinations
26 of nonvolatile reactive amines, in combination with hydroxyl

1 bearing unsaturated esters and/or ethers and/or ether-esters,
2 and/or non-hydroxyl bearing unsaturated esters and/or ethers
3 and/or ether-esters and incompletely etherified and/or esterified
4 oligomeric glycols and/or oligools as partial or full replacements
5 for conventionally employed volatile amines and/or ammonia as
6 neutralizers, and organic solvents as coalescents, respectively,
7 in latex resin applications. This invention has the advantage of
8 reducing emissions and enhancing the performance of films produced
9 from conventional latex resins, and when employed in conjunction
10 with certain types of hypersurfactants (cf. Table 5) also
11 upgrades pigment and/or extender dispersion, and reduces grind
12 times in particulate containing variants; thus enhancing plant and
13 energy use efficiencies. Synergistic performance enhancement, and
14 VOC reduction in latex resins may be attained via the employment
15 of the aforementioned technologies in combination. Partial
16 replacement of either or of both of the aforementioned components
17 by the alternatives of this invention is shown to provide lesser,
18 but still desirable benefits.

19 Preferred Embodiment of The Invention

20 The non-volatile reactive amines useful in the practice of
21 this invention have vapor pressures below 0.1 mm Hg at 25°C,
22 contain at least one basic nitrogen, and at least one carbon to
23 carbon double bond, and/or a transition metal ligand, and contain
24 no more than twelve carbon atoms per basic nitrogen atom. Those
25 more preferable contain one or more (meth)acryl and/or N-vinyl
26 ligands, and those most preferable have a water solubility

1 exceeding 2% at 25°C. Specific examples of such useful non-
2 volatile reactive amines are given in Table (1). These examples
3 are intended to be illustrative rather than exhaustive of the
4 scope of useful materials.

5
6 TABLE I

7	(1A)	N-vinyl pyrrolidone
8	(1B)	N,N,N'-tris (2-butenyl), ethylene diamine
9	(1C)	N', methyl-1, 3-propylene diamine mono 2- propenamide
10	(1D)	N, 2-propenyl, bis (2-hydroxy)propyl amine
11	(1E)	N, 2-propenyl, N'- (2-hydroxy)ethyl, hexamethylene
12		triamine
13	(1F)	4-(N, 3-hydroxypropyl, N-vinyl) 2-amino ethyl 2-butenate
14	(1G)	2-[N, -(2-oxa-cyclopentadienyl)] amino acetic acid ethyl
15		ester
16	(1H)	4-(N,N bis vinyl) 1,3-pentanediol
17	(1I)	tetraethylene glycol mono 3-(N, ethyl) amino, 2-(methyl)
18		2-propenoate
19	(1J)	N,N-divinyl glutamic acid 2-propenyl ester
20	(1K)	6-(N,N bis vinyl) hexanoic acid ethyl ester
21	(1L)	Titanium IV tetrakis N, 2-aminoethyl ethanolato

22 The preferred types of the hydroxyl bearing, unsaturated
23 esters and/or ethers and/or ether-esters useful in the practice
24 of this invention are those having vapor pressures below 0.1 mm
25 Hg at 25°C, which are capable of air initiated, oxidative
26 oligomerization and/or polymerization derived non-reversible

1 bonding, under normal latex application conditions, to film
2 component(s) and/or to substrate, in order to maximize coating
3 properties via crosslinking the resulting latex thereby
4 minimizing its (post film formation) environmental sensitivity.
5 Examples of such unsaturated esters and ether and ether-esters as
6 are useful in the practice of the instant invention are provided
7 in Table II. These examples are intended to be illustrative
8 rather than exhaustive of the scope of useful materials.

9 Table II

- 10 (2A) trimethylol propane bis (2-methyl)-2-propenoate ester
11 (2B) sorbitan tetrakis 2-butenate ester
12 (2C) bis pentaerythritol 2-propenolate, tris 2-propenoate ester
13 (2D) hexanoic acid 6-hydroxy, (2-propenoate)ethyl ester
14 (2E) citric acid mono isodecenyl ester
15 (2F) malic acid bis cinnamyl ester
16 (2G) 3-heptanoyl furfuryl alcohol
17 (2H) 1,2,3-propanetriol 1-vinyl ether, 2-phenyl carboxylate ester
18 (2J) trimeric 2-butenediol mono (methyl) glutarate ester
19 (2K) ethoxylated (4) bis phenol A mono 2-propenoate ester

20 The preferred types of the non-hydroxyl bearing unsaturated
21 esters and/or ethers and/or ether-esters useful in conjunction with
22 the practice of this invention are those having vapor pressures
23 below 0.1 mm Hg at 25°C, which are capable of air initiated
24 oxidative oligomerization and/or polymerization, and non-reversible
25 bonding, under normal latex application conditions, to film
26 component(s) and/or to substrate, in order to maximize coating

1 properties via crosslinking the resulting latex thereby minimizing
2 its (post film formation) environmental sensitivity. Examples of
3 such non- hydroxyl bearing unsaturated esters and ether and ether-
4 esters as are useful in the practice of the instant invention are
5 provided in Table III. These examples are intended to be
6 illustrative rather than exhaustive of the scope of useful
7 materials.

8 Table III

9 (3A) trimethylol propane bis (2-methyl)-2-propenoate ester, mono
10 vinyl ether

11 (3B) 1,2,3-propane triol tris 2-butenate ester

12 (3C) penta erythritol 2-propenolate, tris 2-propenoate ester

13 (3D) hexanoic acid 6-acetoxy, (2-propenoato)ethyl ester

14 (3E) fumaric acid bis isodecyl ester

15 (3F) maleic acid bis cinnamyl ester

16 (3G) furoic acid vinyl ester

17 (3H) 1,2,3-hexanetriol 1,2-bis vinyl ether, phenyl carboxylate
18 ester

19 (3J) trimeric 2-butene-1,4-diol bis propionate ester

20 (3K) ethoxylated (4) bisphenol A bis 2-(methyl)-2-propenoate ester

21 The preferred types of the incompletely etherified and/or
22 esterified oligomeric glycols and/or oligools useful in the
23 practice of this invention are those having vapor pressures below
24 0.1 mm Hg at 25°C, which are oligomers of two to 4 carbon diols,
25 and of three to six carbon triols, wherein each of the ether and/or
26 ester ligands contains five or fewer carbon atoms per oxygen.

1 Examples of such incompletely etherified and/or esterified
2 oligomeric glycols and/or oligools as are useful in the practice of
3 the instant invention are provided in Table IV. These examples are
4 intended to be illustrative rather than exhaustive of the scope of
5 useful materials.

6 Table IV

- 7 (4A) penta (ethylene glycol) mono methyl ether
8 (4B) tetra (1,4-butylene glycol) mono (2-methyl) butyrate
9 (4C) 1-hydroxy-2,5-bis methyl-3,6,9,12-tetraoxa tetradecane
10 (4D) 4-oxaheptane-1,2,6,7-tetraol mono acetate, mono 2-propyl
11 ether (mixed isomers)
12 (4E) ethoxylated (6) 1,2,4-butanetriol bispropanoate (mixed
13 isomers)
14 (4F) tris 1,2,5-n pentane triol tetraethyl ether (mixed isomers)
15 (4G) tris (1,3-propane-diol) mono isopentyl ether
16 (4H) 1,2- bis (2- hydroxy ethoxy ethyl) 1,2,3-propane triol
17 (4J) polyethylene glycol (300) mono amyl ether
18 (4K) tris neopentyl glycol mono n-propyl ether

19 The surfactants most useful in the practice of this invention
20 are those having vapor pressures below 0.1 mm Hg at 25°C, which are
21 capable of non-reversible bonding, under normal processing
22 conditions, to film component(s) and/or substrate in order to
23 maximize coating properties, while minimizing post film formation
24 environmental sensitivity, and which serve to efficiently wet
25 substrates coated, and to disperse particulates, if any, employed
26 in the formulated latex coating. Among the surfactants found to be

1 useful in the practice of this invention are amphoteric detergents,
2 and certain organometalics based on tetravalent titanium or
3 zirconium. These last have been found to contribute significantly
4 to substrate adhesion and improved corrosion resistance on wood,
5 metallic and ceramic substrates, and to be particularly useful in
6 maximizing color intensities of carbon black, azo and
7 phthalocyanine based pigments. Specific examples of the preferred
8 types of hypersurfactants are given in Table V. These examples are
9 intended to be illustrative rather than exhaustive of the scope of
10 useful materials.

11 Table V

- 12 (5A) 12-N,N,N-trimethylaminododecanoato
13 (5B) N-(pentakis oxyethylene sulfato) triethylene diamine
14 (5C) p-[6-N(methyl) morpholino]octyl phenyl phosphonic acid
15 (5D) N,N,N-triethyl glutamic acid
16 (5E) titanium 4 octyl, [(tris octyl) diphosphato
17 (5F) titanium 4 oxoethylene, bis (dodecyl) phenylsulfonato
18 (5G) oxy [bis titanium 4 (bis tridecyl) diphosphate]
19 (5H) zirconium 4 tetraethylene glycol monomethyl ether, tris
20 (tetraethylene glycol monomethyl ether) diphosphato
21 (5J) zirconium 4, bis w-N,N-(dimethyl)amino octanoato, 1,4-
22 cyclohexanediolato
23 (5K) triethylene glycol diolato, bis [zirconium 4 tris (octyl)
24 phosphate]

25 Those skilled in the art shall no doubt be capable of
26 subverting the teachings of this invention via the substitution of

1 functionally equivalent materials, e.g. employment in combination
2 of hydroxylated and non-hydroxyl bearing esters (ether-esters)
3 optionally in combination with partially esterified and/or
4 etherified glycols, and or polyols, in place of either component
5 (set) alone, (as is amply demonstrated in example No. 4.), or of
6 unsaturated analogous unsaturated amides, for a portion of the
7 aforementioned unsaturated ethers, esters or ether-esters disclosed
8 above, and/or fluorination of one or more of the species of
9 components heretofore described as necessary to the successful
10 practice of this invention; however such non-critical
11 modifications, and/or combinations of relevant species types, must
12 be considered as within the scope of this disclosure.

13 Further amplification of the scope and utility of the instant
14 invention to latex coating applications in inks, paints and stains
15 shall be found to be illustrated by the content(s) of examples 1
16 through 5. Said examples are intended to be illustrative rather
17 than exhaustive of the extraordinarily diverse applicability of the
18 instant invention.

19 Example #1

20 This example teaches the superiority of the present invention
21 versus the prior art with respect to the productivity, VOC
22 emissions, and performance quality in a masonry sealer application.

23 A masonry sealer formulation was prepared by the sequential
24 dispersion of the indicated components (pigment dispersion times
25 and grind quality achievement was noted). The resulting sealer was
26 applied via roller to smooth surface, ten day old, 8" X 18" X 1"

1 thick concrete castings, at an application rate of one gallon per
 2 400 square foot, dry time (to touch) was measured under conditions
 3 of 72° F and 85% humidity. After 240 hours of drying @ 72° F and
 4 85% humidity, sealer performance was measured by weighing the dry
 5 casting, then impounding a 6" depth of water, or alternatively 6%
 6 salt solution, on such a casting for twenty four hours, then
 7 draining and weighing the drained casting. The weight percent of
 8 water, and independently that of 6% salt solution, adsorbed by said
 9 castings were used to determine sealer efficacy. The results of
 10 this study are given in Table No. 1.

11 **Formulation:** in parts by weight; (in order of addition) water
 12 200.0; neutralizer¹, as shown; surfactant^a, as shown, biocides²,
 13 18.50; hydroxy ethyl cellulose, 5.00; potassium tris polyphosphate,
 14 2.00; defoamer², 1.00; coalescent^a, as shown; ultramarine blue
 15 pigment, 0.25; rutile titanium dioxide, 200.0, American process
 16 zinc oxide, 25; platey talc, 250; water, 49.98; AC-625 Acrylic
 17 latex resin³, 352.0; defoamer², 0.98; surfactant^b, coalescent^b, as
 18 shown;; water, 24.99; and sodium nitrite 2.30; thixotrope⁴, as
 19 shown (required) to adjust system viscosity to 85-90 KU at 75° F.

20 Table No. 1

21 <u>Formulation</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
22 neutralizer	amp-95/1.98	1B/2.00	1H/1.80	1G/2.20	1D/1.78
23 surfactant(a)	Tamol 850 ⁷ /14.85	5A/1.80	5E/1.75	5K/1.55	5H/1.50
24 coalescent(a)	Propylene glycol	none	none	4J/4.50	none
25	/34.56				
26 surfactant(b)	Triton N101 ³ /2.20	none	5B/1.00	none	5D/1.25
27 coalescent(b)	Texanol ⁸ /9.88	2A/16.42	3A/12.60	3F/18.55	2H/11.70
28					

1	2	3	4	5	6	7	8	9	10
	<u>Formulation</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>			
3	neutralizer	ammonia/1.00	1B/1.00	1H/1.80	1G/1.20	1D/1.78			
4		1L/1.00	ammonia/1.00	AMP-95/1.00					
5	surfactant (a)	Tamol 850 ⁷ /14.85	5A/1.80	5E/0.75	5K/1.55	5H/0.75			
6	surfactant (b)	Triton N101 ⁶ /2.20	none	Triton N101	none	5D/1.25			
7				/2.20					
8	coalescent (a)	Propylene glycol	none	none	4J/4.50	Propylene glyco			
9		/34.56				/17.88			
10	coalescent (b)	Texanol ⁸ 19.98	2A/16.42	3A/12.60	3F/18.55	2H/5.85			

13	14	15	16	17	18	19	20	21	22	23	24	25	26
	<u>Formulation</u>	<u>VOC g/l⁵</u>	<u>Dispersion</u>	<u>Grind</u>	<u>Water</u>	<u>Salt water</u>							
			<u>time hr.</u>	<u>Hegman</u>	<u>adsorption g.</u>	<u>adsorption g.</u>							
16	1	124	3.4	4	46	61							
17	2	8	0.7	6	27	32							
18	3	3	0.6	6	21	28							
19	4	5	0.7	5	24	27							
20	5	4	0.6	6	25	30							
21	6	112	3.1	4	37	48							
22	7	10	0.7	6	32	42							
23	8	3	2.4	5	27	38							
24	9	6	0.7	5	24	27							
25	10	36	1.8	6	31	39							

Notes: a) As shown; 1) A combination of 3.5 parts of Nuosept 95, and 15 parts of Nuocide 404D, Huls Corp. were employed; 2) Defo 806-102; Ultra Inc. 3) AC-625, Union Carbide Corp.; 4) Rhevis CR, Rhevis Corp. 5) via EPA Method 24GC; 6) Rohm and Haas Corp.; 7) Eastman Kodak Inc.

The efficacy of the coalescent systems of the instant art in producing a less water and salt permeable, acrylic latex based masonry seal coating, is compared to a conventionally coalesced counterpart, Formulation No. 1, and is obvious from the preceding data. VOC emissions reduction and improvement in both productivity and dispersion level achieved are likewise self evident.

Example #2

This example teaches the superiority of the present invention versus the prior art with respect to the productivity, VOC

1 emissions, and performance quality in a direct to metal,
2 maintenance coating application.

3 Direct to metal coatings were prepared by the sequential
4 dispersion of the indicated components (pigment dispersion times
5 were noted). The resulting coating was spray applied to sandblasted
6 smooth surface 24" X 8" carbon steel test panels at application
7 rate of one gallon per 250 square feet. After 120 hours of drying
8 @ 72° F and 85% humidity, edge sealing and scribing, the coatings'
9 corrosion resistance performance were each measured by QUV cabinet
10 exposure [cyclic exposure to UV radiation, 4% saline solution, and
11 varying temperature (25°-80° C)].

12 **Formulation:** in parts by weight (in order of addition): water,
13 50.0; neutralizer, as shown; Surfactant^a, as shown, biocide¹, 4.00;
14 oxidized polyethylene wax, 4.00; (disperse wax) polyurethane
15 thixotrope², as shown; defoamer³, 2.00; coalescent^a, as shown,
16 ultramarine blue pigment, 0.25; rutile titanium dioxide, 125; zinc
17 aluminate 150; Acrylic latex resin⁴, 64.0; (disperse particulates
18 to Hegman 7.5+). Neutralizer, is shown; acrylic latex resin⁴,
19 564.0; defoamer², 0.98; surfactant^b, coalescent^b, as shown; water,
20 16.00; arid sodium nitrate 2.30. Thixotrope², (as required) to
21 adjust system viscosity to 80-85 KU at 75° F . The control coating
22 required 3.7 hours to disperse to a Hegman grind gauge reading of
23 7+, whereas each of the instant art coatings achieved said fineness
24 of grind in less than one half hour. The results of this study are
25 given in **Table No. 2**

Table No. 2

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Table No. 2

Formulation	1	2	3	4	5	6
neutralizer	DMAMP-80 ⁵ /12.5	1A/4.00	1C/1.80	1E/2.20	1J/1.78	DMAMP-80 ⁵ /6.25 1A/ 2.00
surfactant (a)	Triton CF10 ⁶ /10.00	5D/1.80	5F/1.75	5C/1.55	5J/1.50	Triton CF 10/5.00
thixotrope ²	15.00	5.00	5.50	8.70	5.30	9.32
coalescent (a)	Diproylene glycol /34.60	4B/12.00	4E/10.5	4K/8.25	none	none
surfactant (b)	none	none	5A/1.00	Triton CF10 ⁶ .4.0	none	5D/1.25
coalescent (b)	PmPE ⁷ /44.60	2A/16.42 4A/7.45	3A/12.60	3F/18.55	2H/14.70	2H/14.70
thixotrope ²	21.40	3.20	1.50	0.70	2.30	1.95
Formulation	7	8	9	10	11	12
neutralizer	DMAMP-80 ⁵ /12.5	1A/4.00	1C/1.80	1E/2.20	1J/1.78	DMAMP 80 ⁵ /6.25
surfactant (a)	Triton CF10 ⁶ /10.00	5D/1.80	5F/1.75	5C/0.55	5J/1.50	Triton CF10/5.00
surfactant (b)	none	none	5A/1.00	Triton CF10 ⁶ /2.0	none	5D/1.25
thixotrope ²	15.00	5.00	5.50	8.70	5.30	9.32
coalescent (a)	Dipropylene glycol /17.3	PmPE ⁷ /22.60	4B/12.00	4E/10.5	4K/8.25	PmPE ⁷ /22.3
coalescent (b)	2A/ 8.81	2A/ 6.42	PmPE ⁷	3F/ 18.55 4A/7.45	2H/14.70	2H/14.70
thixotrope ²	18.90	6.20	4.50	3.70	2.30	6.95

Formulation	VOC g/l ⁸	Initial gloss @60°	60° gloss @ 200hr. QUV	60° gloss @ 500 hr. QUV.	60° gloss @ 1,000 hr. QUV
1	232	82	76	31	film destroyed
2	9	91	87	82	76
3	11	93	90	88	80
4	8	87	86	82	61
5	10	88	86	85	84
6	13	84	80	66	59
7	72	85	79	46	12
8	57	80	76	51	18
9	28	87	84	72	63
10	7	88	86	84	78
11	8	92	90	87	85
12	77	85	80	75	48

Notes: 1) Nuosept 95,-Huls Corp. 2) Acrysol RM 2020, Rohm and Haas 3) Defo 3000; Ultra Inc. 4) HG 56, Rohm and Haas Corp. 5) 80%

1 2-N,N-dimethylamino-2-methyl propanol aq. 6) Union Carbide Corp. 7)
2 propylene glycol mono phenyl ether. 8) via EPA Method 24GC

3 The efficacy of the coalescent systems of the instant art in
4 producing a more environmentally resistant, acrylic latex based
5 direct to metal coating, as compared to a conventionally coalesced
6 counterpart, Formulation No. 1, is obvious from the preceding data.
7 VOC emissions reduction, and improvement in productivity achieved
8 are likewise self evident.

9 Example #3

10 This example teaches the superiority of the present invention
11 versus the prior art with respect to productivity, VOC emissions,
12 and performance quality in a polyvinyl acetate based interior flat
13 architectural paint application.

14 Interior flat paints, were prepared by the sequential
15 dispersion of the indicated components (pigment dispersion times,
16 and dispersion efficacy were noted). The resulting coating was
17 brush applied to unprimed drywall (gypsum sheet) @ 72° F and 80%
18 humidity, coverage, stain removal, and scrubability performance
19 were each measured after 7 days of drying 72+/- 2°F @ 65-80%
20 humidity.

21 Formulation; in parts by weight; (in order of addition) water,
22 200.0; neutralizer¹, as shown; surfactant^a, as shown; biocides²,
23 1.00; hydroxy ethyl cellulose, as shown; potassium tris
24 polyphosphate, as shown; defoamer³, 1.00; coalescent^a, as shown;
25 ultramarine blue pigment, 0.25; rutile titanium dioxide, 250.0,
26 water washed clay⁴, 50.0; calcium carbonate⁵, as shown; diatomite⁶,

1 50.0; water, 49.98; PVA latex resin⁷, 352.0; defoamer², 0.98;
 2 coalescent^b, as shown ; water, 100 .0;and sodium nitrite 2.30;
 3 thixotrope⁸, as shown (required) to adjust system viscosity to 90-
 4 100 KU at 75° F.

5 The results of this evaluation are shown in Table No. 3.

6 Table No. 3

7 <u>Formulation</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
8 neutralizer	28% ammonia aq. 6.05	1B/2.00	1H/1.80	1G/2.20	1D/1.78	28% ammonia 6.05
9 HEC(QP-4400)	5.50	1.20	1.35	1.25	1.40	1.35
10 surfactant(a)	Tamol 731/6.90 Triton N101/3.31	5E/1.80	5J/1.75	5C/1.55	5F/1.5	Tamol 731/6 Triton N101/3.31
11 coalescent(a)	Propylene glycol /51.95 Texanol/9.88	4A/6.00	4 F/7.00	4H/5.50	4E/7.00	4E/7.00
12 Calcite	50	150	125	150	140	50
13 coalescent(b)	none	2A/26.4	3C/12.60	3F/18.50	2J/11.90	2J/11.90
14 thixotrope ⁸	3.5	3.0	3.1	2.7	2.4	3.9
20 <u>Formulation</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>		
21 neutralizer	28% ammonia aq. 6.05	1B/2.00	1H/1.80	1H/1.80		
22 HEC (QP-4400)	5.50	1.20	1.35	1.25		
23 surfactant(s)	Tamol 731/ 6.9 Triton N101/ 3.31	Tamol 731/ 3.9 5J/1.0	5J/ 1.75	Tamol 731/ 6.9 Triton N101/ 3.		
24 coalescent (a)	Propylene glycol 51.95	4A/6.00	Propylene glycol 51.95	4H/5.50		
25 calcite	50	100	125	150		
26 coalescent (b)	4E/2.00	2A/ 26.4	3C/ 12.60	3F/ 18.50		
27 thixotrope ⁸	3.5	3.0	3.1	2.7		

34 <u>Formulation</u>	<u>VOC g/l⁹</u> <u>hr.</u>	<u>Dispersion Time</u>	<u>Grind</u> <u>Hegman</u>	<u>Min.Coalescence</u> <u>temp °C</u>	<u>Scrubs¹⁰</u>	<u>Stain Removal¹¹</u>
35 1	199	2.4	4	47	410	6
36 2	8	0.4	5	34	1,740	9
37 3	3	0.6	6	32	2,025	10
38 4	5	0.6	6	36	1,960	9
39 5	4	0.5	5	30	2,230	10
40 6	15	2.2	4	31	785	8
41 7	190	2.4	4	43	850	7
42 8	9	0.9	5	35	1,140	8
43 9	188	1.1	5	45	890	7
44 10	8	2.4	4	37	1,310	8

47
 48 Notes: 1) As shown; 2) Nuosept 95, Huls Corp.; 3) Defo 3000; Ultra
 49 Inc.. 4) 70C Huber Corp.5) Camel Carb., Cambel Corp.; 6) Diafil 530

viscosity of 65-70 KU, and the coating was applied by curtain coating on sanded but unprimed 4' X 8' X 0.25" laminate natural oak (on pine) substrate. The coated panels were force dried by passing same through a 180° F oven for 20 minutes, then cooled at ambient temperature (ca. 80° F) for 24 hours prior to evaluation, for abrasion and solvent resistance. to determine coating performance, efficacy. The results of this study are given in Table No. 4.

Table No. 4

Formulation	1	2	3	4	5	6	7	8
Part A:								
neutralizer	28%	1A	1H	1H	1H	1B	1B	1B
	ammonia aq.							
Part B: formulation								
Texanol	8.00						4.00	4.00
diethylene glycol	18.20						9.10	9.10
mono butyl ether								
2A		12.05	6.00		6.00	6.00	6.00	
2C			4.40	10.70				
3B					4.20			6.00
4G			1.90	2.90	1.05	6.20		
4J								
Formulation	VOC g/l ¹ resistance ²	Abrasion resistance ³	Solvent resistance ⁴	Stain hr. @ 80°F ⁵	Mix pot life			
1	165	114	lifts	poor	7.5			
2	3	31	slight softening	good	42			
3	4	29	slight softening	fair	35			
4	3	24	no change	excellent	40			
5	3	26	no change	good	61			
6	4	98	mod. Softening	fair	46			
7	83	19	slight softening	fair	21			
8	85	78	severe softening	poor	11			

Notes: 1) By EPA Method 24GC; (formulations 2 through 7 produced 0 to negative VOC readings by EPA Methods 24, and 24A; 2) Tabor CS-10 wheel 1000 cycles; 3) 24 hr methyl ethyl ketone covered spot test; 4) 24 hr exposure to lipstick; 5) time to 10% loss of abrasion resistance in finished coating.

This example demonstrates, that the use of the combination of components cited as the basis of the instant invention, viz. That

1 Whittaker, Clark, and Daniels Inc. 7) Rhoplex 3077, Rohm and Haas
2 Corp.; 8) Rhevis CR, Rhevis Corp. 9) via EPA Method 24GC. 10) ASTM
3 method; 11) ASTM method.

4 The efficacy of the coalescent systems of the instant art in
5 producing a more, scrub and stain resistant PVA latex based
6 interior flat architectural coating as compared to a conventionally
7 coalesced counterpart, Formulation No. 1, is obvious from the
8 preceding data. VOC emissions reduction and improvement in both
9 productivity and dispersion level achieved are likewise self
10 evident, as is a considerable reduction in minimum coalescence
11 temperature, without recourse to the use of low boiling, flammable
12 solvent(s), normally employed to induce same.

13 Example #4

14 This example teaches the superiority of the present invention
15 versus the prior art with respect to the productivity, VOC
16 emissions, and performance quality in a force dried, clear,
17 protective, two component acrylic latex cured - waterborne epoxy,
18 wood cabinet coating.

19 Component A. neutralizing agent, as shown-3.5 PBW; sodium
20 nitrite 0.15 and defoamer (Patcote 519-Patco Coatings Inc.) were
21 admixed with 95.85 PBW of (Acrylic latex-Maincote AE 58), and said
22 emulsion was subsequently mixed with 50 PBW of Component B,
23 formulated by blending various additives, as shown, into 12.5 PBW
24 of Genepoxy 370-H55- Daubert Chemical Co., and diluting as
25 necessary with water to produce a total part B weight of 25 parts.
26 Thixatrop¹, was added, as required, to provide an initial mix

1 nonvolatile reactive amines, in combination with hydroxyl bearing
2 unsaturated esters and/or ethers and/or ether-esters, and/or non-
3 hydroxyl bearing unsaturated esters and/or ethers and/or ether-
4 esters and incompletely etherified and/or esterified oligomeric
5 glycols and/or oligools as (partial or full) replacements for
6 conventionally employed volatile amines and/or ammonia as
7 neutralizers, and organic solvents as coalescents, respectively may
8 be employed to substantially enhance the processability (pot life),
9 mechanical and chemical resistance properties (abrasion and stain
10 resistance respectfully) as well as attain VOC reduction in wood
11 coatings. A further benefit of the instant invention as applied to
12 wood coatings is that unlike conventionally coalesced waterborne
13 coatings, e.g. formulation D-1 latex formulations based upon the
14 teachings of this invention, e.g. formulations D-2 through D-7, do
15 not cause significant grain rise, thereby virtually eliminating the
16 necessity for intercoat sanding. These data also demonstrate that
17 subsets of the preferred combination of components herein disclosed
18 (e.g. formulations D-3, D-5, and D-6) may provide considerable
19 benefits relative to their conventional counterparts, such as
20 Formulation No. 1; however, omission of one or more of the
21 components of the combination herein disclosed leads to inferior
22 results as compared to the inclusion of the full compliment.

23 Example #5

24 This example teaches the superiority of the present invention
25 versus the prior art with respect to the productivity, VOC
26 emissions, and performance quality in waterborne flexographic inks.

A latex flexographic ink formulation, was prepared by the sequential dispersion of the indicated components (pigment dispersion times and grind quality achievement was noted). The resulting ink was applied via a #6 wire wound rod to bond paper, and permitted to dry. Dry time (to touch) was measured under conditions, of 72° F and 85% humidity. After 6 hours of drying @, 72° F and 85% humidity, heat seal resistance performance (face to face) was measured at 25 psig. and 2 seconds contact time) the results of this study are given in Table No. 5.

Formulation: in parts by weight; (in order of addition) E-2350 resin 267; neutralizer, as shown; surfactant, as shown; Defo 1020 defoamer 4.00 Ultra Inc.; coalescent^a, as shown; calcium lithol pigment 50% presscake, 400-Sun Chemical Corp.; Michemlube wax 5-Michelman Inc., water, as required in order to produce a viscosity of 27 seconds using a #2 Zahn cup. Relative dry ink color intensities were measured by integrating thin film reflectance spectra at 300-600 um wavelengths using a spectrophotometer after 48 hours of drying at the above conditions

Table No. 5

<u>Formulation</u>	<u>1</u>	<u>2</u>	<u>3</u>
neutralizer	28% ammonia aq, 2.00	1D/2.00	IH/1.40
surfactant	Tamol 850/4.95	5A/1.80	5E/1.75
coalescent	isopropanol/48 Texanol/24	2A/10.5 3C/15.5 4H/5.5	2E/20.0
<u>Formulation</u>	<u>4</u>	<u>5</u>	<u>6</u>
neutralizer	1F/2.00	1D/1.46	28% ammonia aq/2.00
surfactant	5K/1.55	5H/1.50	Tamol 850/ 4.95
coalescent	3C/25.0	3C/18.0 4H/7.0	3C/18.0 4H/7.0

<u>Formulation</u>	<u>VOC g/l⁵</u>	<u>Dry to touch time</u> <u>hr.</u>	<u>6 hr. Heat seal</u> <u>resistance °C</u>	<u>Relative color</u> <u>intensity.</u>
1	144	3.4	86	1.00
2	4	0.7	154	1.42
3	3	0.6	172	1.27
4	5	0.7	104	1.08
5	4	0.6	167	1.39
6	7	0.6	122	1.03

Notes: The efficacy of the coalescent systems of the instant art in producing a faster drying, more strongly colored, and lower VOC acrylic latex based printing ink coating as compared to a conventionally coalesced counterpart are obvious from the preceding data, as are indications that incomplete application of the teachings of this disclosure may lead to inferior results. Note the deficiencies in the heat seal performance of formulation E-4 as compared to E-2, E-3, and E-5, the benefits of hyperdispersant use as indicated E-2 to E-5 vs. E-6.

Example #6

This example teaches the utility of the instant invention in the production of superior waterborne anti-scuff overprint coatings for graphic arts applications. A 30% solution of water reducible styrene-acrylic copolymer resin in water was prepared by admixture of the indicated neutralizing agent-as shown, water, and Air Product Corp's Flexbond 28 resin. Thirty parts by weight (PBW) of the preceding solution, were admixed with 50 PBW of styrene- acrylic latex resin (Flexbond 285, Air Products Corp.), coalescent, and surfactant(s) -as shown, poly ethylene wax, 2 PBW, and sufficient water to dilute the system to 100 PBW.

1 The resulting coating was applied, in line on a high speed six
 2 color lithographic cold web press, to a solid four color print
 3 pattern, followed by in line infrared drying, and folding.

4 Measurements of VOC (by EPA Method 24), offset, and blocking
 5 limited maximum allowable impression rates (impressions/ minute
 6 [IPM]), were made. The results are given in Table 6.

7 Table 6

8	Formulation	<u>1</u>	<u>2</u>	<u>3</u>
9	neutralizer	28% ammonia/ 6.00	AMP 95 ¹ / 8.00	AMP 95/ 8.00
10	coalescent (s)	isopropanol/ 12	isopropanol/ 12	2G/ 4.50
11	surfactant	Tamol 850/ 2.05	Tamol 850/ 2.05	5K/ 0.75
12				
13	Formulation	<u>4</u>	<u>5</u>	<u>6</u>
14	neutralizer	1G/ 6.00	1G/ 6.00	1G/ 6.00
15	coalescent (s)	2G/ 4.50	2G/ 4.50	3C/ 3.65
16				4C/ 0.85
17	surfactant	Tamol 850/ 2.05	5K/ 0.75	2K/ 0.75
18				
19	Performance	<u>1</u>	<u>2</u>	<u>3</u>
20				
21	VOC -g/l.	131	146	27
22	max IPM (offset)	8,240	9,235	12,720
23	max IPM (block)	10,150	9,950	14,610
24				
25	Performance	<u>4</u>	<u>5</u>	<u>6</u>
26				
27	VOC -g/l.	3	4	4
28	max IPM (offset)	16,670	18,000 ²	18,000
29	max IPM (block)	17,130	18,000	18,000
30				
31				

1 **Claims:**

2 **What we claim is:**

3 1) Compositions of matter comprising:

4 essentially nonvolatile reactive amines;
5 hydroxyl bearing, unsaturated esters and/or ethers and/or
6 ether-esters; and/or
7 combinations of non-hydroxyl bearing, unsaturated esters
8 and/or ethers and/or ether-esters, and/or saturated hydroxyl
9 bearing etherified and/or esterified oligomeric glycols
10 and/or oligools.

11 2) Compositions of matter comprising:

12 volatile amines and/or ammonia neutralizers;
13 hydroxyl bearing, unsaturated esters and/or ethers and/or
14 ether-esters; and/or
15 combinations of non-hydroxyl bearing, unsaturated esters
16 and/or ethers and/or ether-esters, and/or saturated hydroxyl
17 bearing etherified and/or esterified oligomeric glycols
18 and/or oligools.

19 3) Compositions of matter comprising:

20 essentially nonvolatile reactive amines; and
21 organic solvent coalescents.

22 4) Compositions of matter as defined in Claims 1, 2 and 3 having
23 as an additional component latex resin.

24 5) Compositions of matter as defined in Claims 1, 2, 3 and 4
25 having hypersurfactants as an additional component.

26 6) Compositions of matter as defined in Claim 5 in which the

hypersurfactants are derived from titanium or zirconium based organometalics.

7) Compositions of matter as in Claim 4 in which the latex resin is derived from poly vinyl acetate and/or acrylic and/or a copolymer thereof.